Medical Expenditure Panel Survey

SURVEY OVERVIEW

MEPS History

- **1977 National Medical Care Expenditure Survey**
- **1987 National Medical Expenditure Survey**
- **1996 Medical Expenditure Panel Survey**

The Medical Expenditure Panel Survey, or MEPS as it is commonly called, is the third in a series of national probability surveys conducted by AHRQ on the financing and utilization of medical care in the United States. The National Medical Care Expenditure Survey (NMCES) was conducted in 1977, and the National Medical Expenditure Survey (NMES) in 1987. However, as the health care system has evolved over recent years, the need for more timely data to inform health policy became evident. The MEPS was initiated in 1996 and continues to be fielded annually.

Although modes of data collection and instrument design have changed considerably over the last 20 years, every effort has been made to maintain a core set of critical data elements to facilitate longitudinal analysis.

MEPS Survey Components

- **Household Component (HC)**
  - **Medical Provider Component (MPC)**
  - **Insurance Component (IC) – Link Sample**
- **Insurance Component (IC) – List Sample**

The Medical Expenditure Panel Survey is a family of surveys that collect health care information about the U.S. health care system. It consists of

(1) **a household survey (MEPS-HC)** of the civilian noninstitutionalized population.

(2) **a survey of medical providers** (doctors, hospitals and home health agencies) directly linked to respondents in the household survey **(MEPS-MPC)**. After obtaining permission from the household survey respondents, medical providers are contacted by telephone to provide information that household respondents cannot accurately provide. Information is collected on dates of visit, diagnosis and procedure codes, charges and payments. The MPC is not designed to yield national estimates. It is primarily used only as an imputation source to supplement/replace household-reported expenditure information.

(3) **a survey of insurance providers** (employers and unions) to look at the availability of insurance, benefit and payment provisions, and premium costs. This information can be linked to respondents in the household survey **(MEPS-IC Link Sample)**. This linked data was collected for 1996-99, 2001, and 2002.

(4) **an independent survey of employers and unions** not linked to the household survey **(MEPS-IC List Sample)**. The list sample contains information from about 45,000 establishments sampled from a U.S. Census Bureau frame and supports national- and state-level estimates for all 50 states.

MEPS Pharmacy Component

- 8,000 pharmacies sampled
  - Data on prescribed medicines purchased by households
- Data obtained
  - Medication name
  - National Drug Code (NDC)
  - Quantity dispensed
  - Strength and form
  - Sources of payment
  - Amount paid by each source

AHRQ also has an agreement with MULTIM Lexicon to include their therapeutic class information on the prescribed medicine public use files.

MEPS-Household Component (HC) Survey Design

- **Subsample of household respondents from the previous year's National Health Interview Survey (NHIS), sponsored by NCHS**
- **Representative of the civilian non-institutionalized population of the U.S.**
- **Five in-person interviews (CAPI) over two and one-half year period**
- **Person- and family-level data collected**

The MEPS-HC uses the National Health Interview Survey (NHIS) conducted by the National Center for Health Statistics as its sampling frame. The NHIS sampling frame provides a nationally representative sample of the U.S. civilian noninstitutionalized population and reflects an oversampling of blacks and Hispanics.

In certain years MEPS over samples additional policy relevant subgroups.

This design allows linkage back to the previous years NHIS for analytic purposes.

Data are collected at person and household levels in a series of five in-person interviews over the course of a two and a half year period of time using computer-assisted personal interviewing (CAPI) to collect two full years of data.

All data for a household is reported by a single household respondent. At each interview the questionnaire collects information about each household member, and the survey builds on this information from interview to interview.

Each of the five household interviews takes on average 90 minutes to conduct. However, administration times can range from as little as an hour to over four hours, depending on the composition and health status of the household.

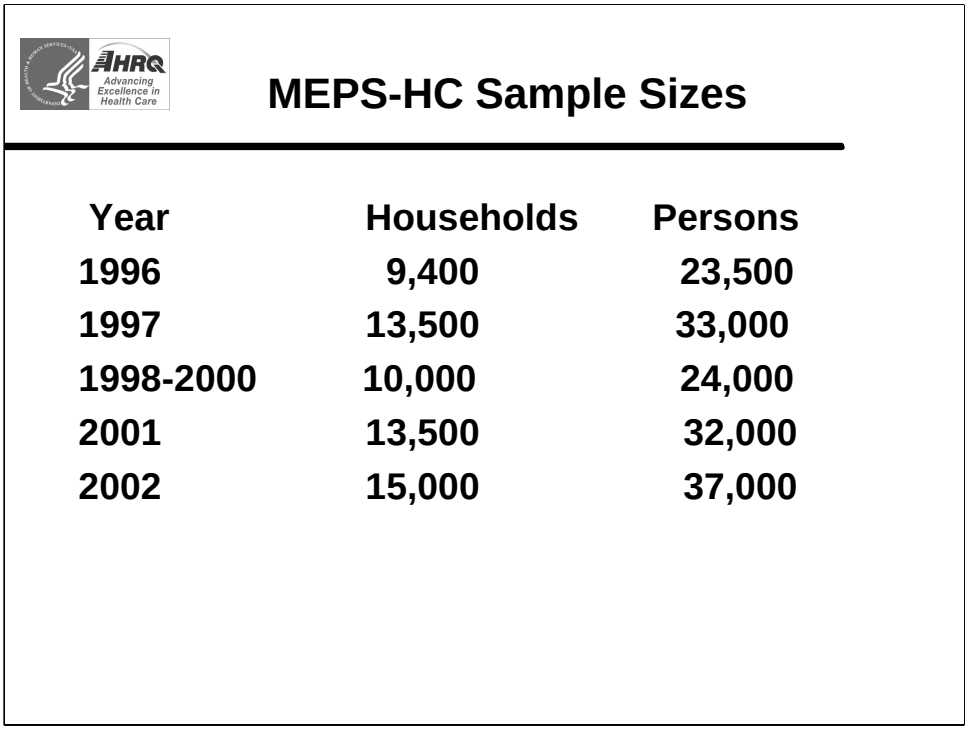
Oversampling in MEPS-HC

- **Every year: Blacks and Hispanics**
  - **Carryover from NHIS**
- **1997: Selected subpopulations**
  - **Functionally impaired adults**
  - **Children with activity limitations**
  - **Adults 18–64 predicted to have high medical expenditures**
  - **Low income**
  - **Adults with other impairments**
- **2002 and beyond:**
  - **Asians**
  - **Low income**
  - **Additional oversampling of blacks in 2004**

Certain populations are oversampled in the MEPS to allow adequate sample sizes to facilitate the use of MEPS to examine population groups of particular policy interest.

All estimates from MEPS need to be weighted with the weights provided on the public use files to adjust for sample design and survey nonresponse. In addition, when comparing estimates you need to use an appropriate method (such as SUDAAN) to compute standard errors to account for complex design.

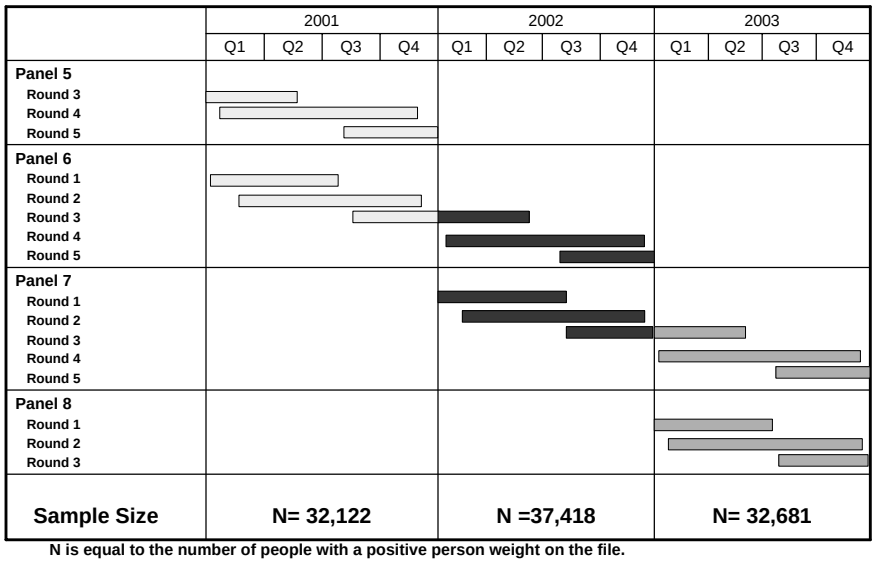
A fact sheet outlining these issues can be found on the fact sheet section of the What is MEPS part of the MEPS web site:
http://www.meps.ahrq.gov/FactSheets/FS_StandardErrors.HTM



To give you an idea of sample sizes--they range from a low of 23,500 persons in 1996 to a steady state of about 37,000.

Why is this important? Researchers may need to consider pooling years of data to obtain adequate sample sizes for certain types of subpopulation analysis. As a rule of thumb, 100 unweighted cases are needed to support national estimates.

MEPS-HC Panel Design: Data Reference Periods



N is equal to the number of people with a positive person weight on the file.

Overlapping Panel Design

- Each year a new panel is initiated and followed for two years through five in person interviews.
- Since not all interviews can be conducted on the same day, rounds can vary in length from two to six months. The Round 1 reference period goes from January 1st to the day of the first interview. Subsequent interviews cover the time frame since the previous interview. The Round 5 reference period ends on December 31st.
- Since response rates tend to decline over time, the yearly MEPS data files combine data from the second year of a panel with data from the first year with data from the first year of a new panel to maximize response rate.
- For each panel, Rounds 1, 2, and part of 3 comprise year 1; and part of Round 3, Round 4, and Round 5 comprise year 2.
- This cycle is repeated each year. Subsequent panels can be combined to produce more precise estimates or compared to monitor changes in health care utilization and expenditures over time.

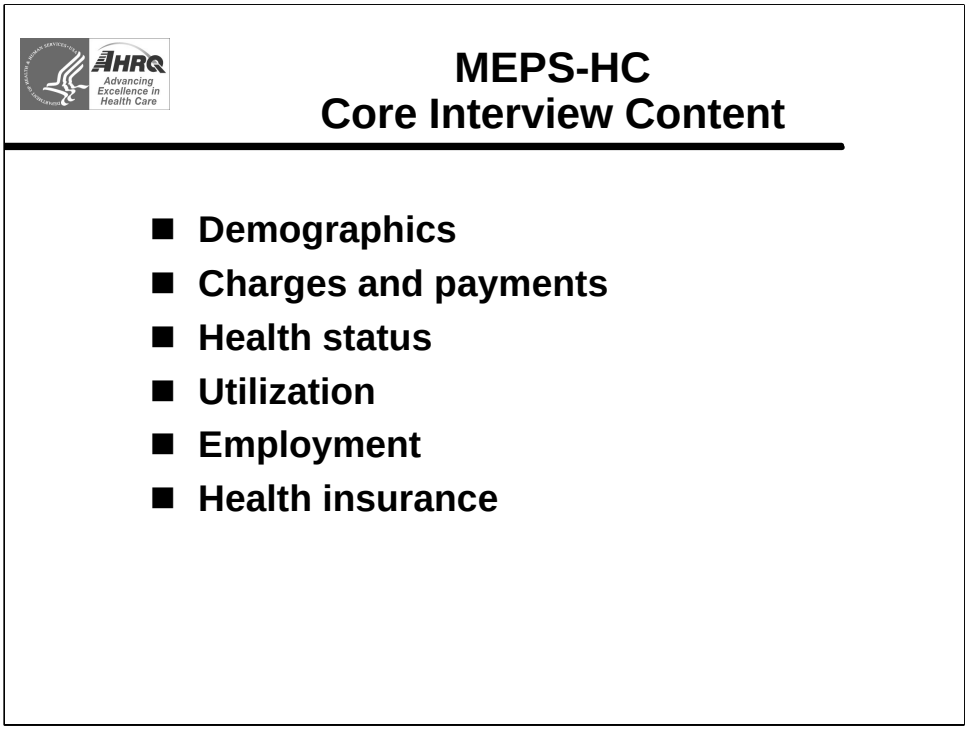
MEPS-HC Purpose

- **Estimates annual health care use and expenditures.**
- **Supports distributional estimates.**
- **Tracks changes in insurance coverage and employment.**

The MEPS is primarily designed to provide nationally representative data on the types of health care Americans use, how frequently they use them, how much is paid for the services, and who pays for what portion of those payments.

One of the unique features of the MEPS is that it supports distributional estimates. For example, by using MEPS one can derive statistics like the top 1% of the population accounts for 25% of total costs, while the bottom 50% of the population accounts for only 3% of total expenditures.

It will also provide information on the types and costs of private health insurance available to and held by the U.S. population.



At each interview the MEPS-HC collects detailed data on

Demographic Characteristics--including age, race/ethnicity, sex marital status and family relationships.

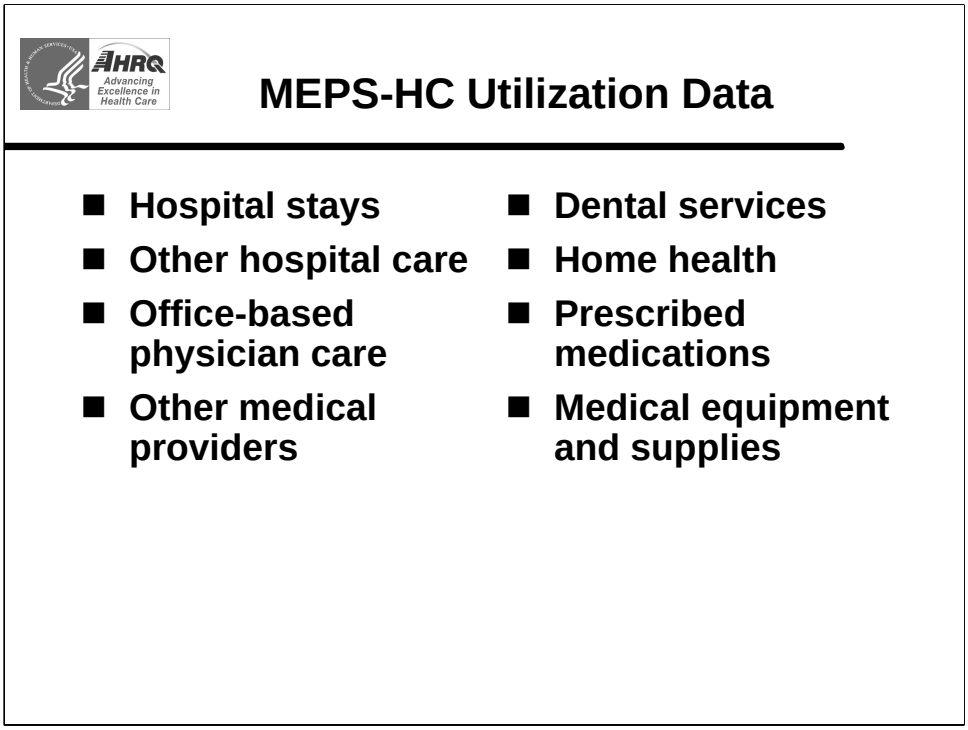
Charges and Payments--by payer source.

Health Status--including overall physical and mental health status, activity and functional limitations.

Utilization--MEPS collects data about all hospital (emergency room, inpatient and outpatient events), physician services, home health care, and prescribed medicines.

Employment--for all persons 16+ for each job (including retirement jobs): employment status, roster of all jobs, hours worked, job tenure, wages, types of business, whether health insurance was offered.

Health Insurance--both private and public health insurance status throughout the reference period and for each month, who the policy holder is, the source of coverage (employer sponsored or privately purchased) who is covered whether or not it is an HMO, type of plan (self or family coverage). Availability of coverage from employer is ascertained, and if health insurance was available from the employer, whether or not the person elected coverage.

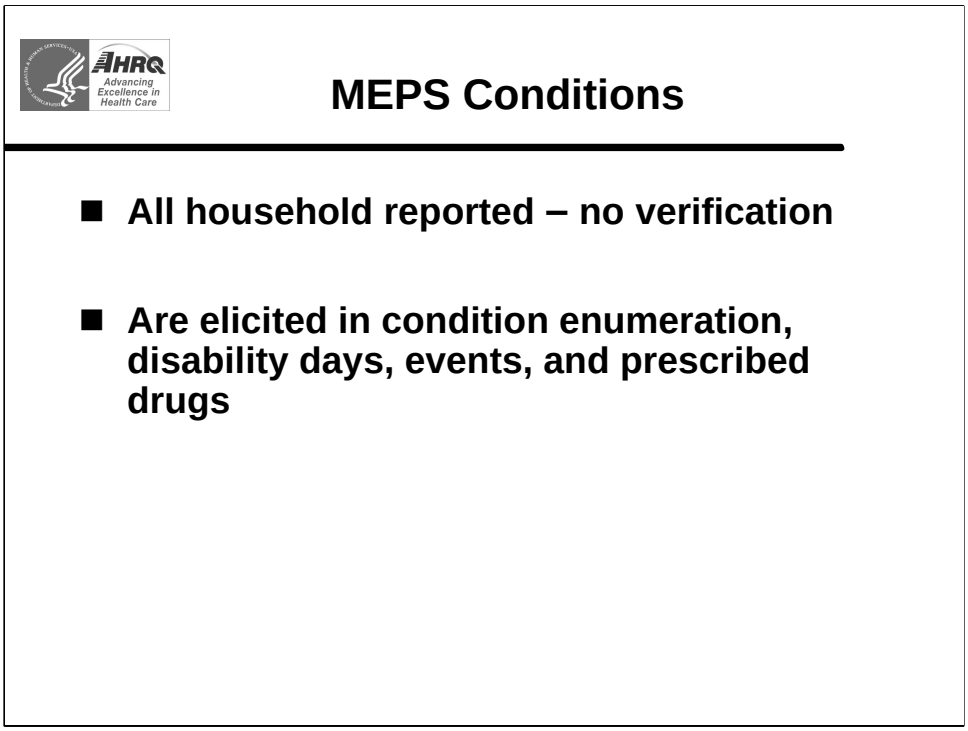


In terms of the use of medical care services, the survey collects data about all hospital (emergency room, inpatient and outpatient events), physician services, home health care, and prescribed medicines.

MEPS-HC Event Detail

- Type of practitioner
- Time spent with provider
- Type of care
- Conditions
- Charges (except p-meds)
- Payments

For each event, the type of practitioner (physician, non-physician; if non-physician what type), the time spent with provider, the type of care (i.e., general check-up, diagnosis or treatment, emergency, well-child), the condition (which is later ICD-9 coded) and all charges (list prices) and payments (transactions) are ascertained. Starting in 2002, physician specialty is ascertained and for doctor and outpatient visits and type of place is obtained for doctor visits.



a) In the CE section, at CE04 (PRND.SERICOND) people are asked if they have any physical or mental health problems, or if they have experienced any injuries. If they report "yes," they are allowed to create a condition.

b) In the DD section, if a person reports missing days of work (DD02: PRND.DDNOWORK), missing days of school (DD05: DDNOSCHL), or spending days in bed (DD08: DDBEDAYS), then a condition record is created.

c) When a person reports a medical event or a prescription medicine, he or she is asked if the event is related to a medical condition. If he or she answers "yes," a condition record is created.

MEPS-HC Periodic Supplements

- **Access to care**
- **Satisfaction with health plans and providers**
- **Health status**
- **Income**

Topical modules are periodically rotated in and out of the MEPS. These modules tend to focus on areas of policy interest and have included

Access to care--whether persons have a usual source of care, reasons for not having a usual source of care, difficulties in obtaining care

Satisfaction--with usual source of care, health plans, and choice of providers

Long-term care--characteristics of caregivers

Health status--ADL and IADL measures and condition-specific information

Income--amounts and types of income (once a year)

New Supplements

- **Adult self-administered questionnaire (SAQ)**
- **Preventive care**
- **Enhanced access to care section**
- **Children's health supplement**

A number of quality-related enhancements were made to the MEPS in 2000.

- Starting in 2000, an adult SAQ has been fielded once a year. This questionnaire collects information on quality, health status, and outcomes. The questionnaire focuses on information that needs to be self-reported, such as self-assessments, height /weight , opinions about health care issues, and items that may be of a sensitive nature. More specifically, the SAQ contains patient satisfaction and accountability measures from the Consumer Assessment of Health Plans (CAHPS), the SF-12 physical and mental health assessment tool, EQ-5D EuroQol 5 dimensions with visual scale (2000-2003), attitude items. Starting in 2004 the K-6 Kessler mental health distress scale and PH2 two- item depression scale were added to the SAQ.
- The section of the MEPS addressing preventive care was updated to reflect current screening guidelines and add additional screening test questions.
- Language questions and length of time in U.S. were added to the access to care supplement.
- For children, a number of quality measures were introduced: CAHPS measures on health care received in the last year, use of preventive services, the Columbia Impairment Scale for measuring behavior and relationships, the Living with Illness Measure to quantify resistance to illness and health needs due to a condition, and questions to identify children with special health care needs.

New Supplements

- **Priority Conditions**
  - **Diabetes**
  - **Asthma**
  - **Hypertension**
  - **Ischemic Heart Disease**
  - **Arthritis**
  - **Stroke**
  - **COPD**
- **Diabetes Care SAQ (DCS)**

To help inform the Congressionally mandated National Healthcare Quality Report a battery of questions was added to identify persons with certain priority conditions. Unlike other MEPS condition data that is conditioned on the reference year, this information is asked in the framework of "Did a doctor or health professional ever tell you that you had . . .?" The conditions enumerated in this section are not added to the condition roster.

The criteria used to select the conditions to include were

•Sufficient prevalence to support reliable estimates

•The ability of a household respondent to accurately report

•Availability of evidence-based quality measures

•Level of medical expenditures for treatment of condition

•Availability of diagnostic questions used in other national surveys

These conditions are reviewed periodically and will be subject to future enhancement and/or rotation.

For persons identified as having diabetes, a follow-up diabetes-specific SAQ is administered once a year. Questions are asked about whether or not they received recommended treatment to monitor their condition: dilated eye exam, foot exam, and A1c test.

Types of MEPS-HC Files

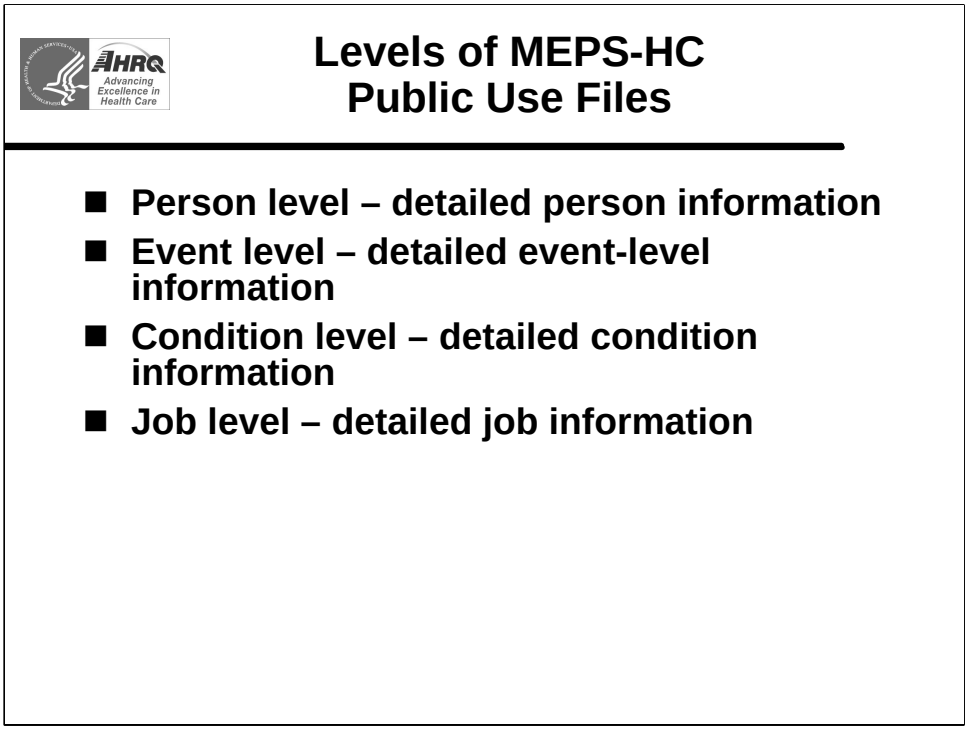
- **Full-year files – calendar year data**
- **Point-in-time files – snapshot first part of year**
- **Pooling and longitudinal weights files**

A series of calendar-year-specific MEPS public use data files (PUFs) are produced annually. Each of these files include full-year information from several rounds of data collection which together comprise a complete calendar year's worth of information. Full-year data files vary in structure depending on the nature of file content. Files are produced at the person level, event level, condition level, and job level. These files all contain data from the second year of a continuing panel with the first year of a new panel. The person identifier (DUPERSID) remains the same for a person for his/her entire duration in the survey. All data for a particular person across all files can be linked using this variable.

In addition to full-year files, MEPS also releases point-in-time files

Point-in-time files are files which produce a snapshot of what is going on at a fixed point in time (Round 3 of a finishing panel and Round 1 of a new panel) . In the case of MEPS files, the point-in-time file represents the first part of the calendar year. These files contain minimal data elements and are primarily intended to give analysts an early glimpse of what the full-year insurance estimates will likely be.

A file that standardizes Strata and PSU's across years is available to facilitate the pooling of multiple years of data, and longitudinal weight files are available to facilitate the analysis of both years of a particular panel.



MEPS data are released at several different levels.

Person level-files --files where each record on the file represents a person. On person level files a record includes characteristics associated with each person, for example age, race, or sex.

MEPS releases 8 types of event files -- hospital stays, emergency room, out-patient department, medical visits, home health, dental, prescribed medicines, and other medical expenditures; each record represents a unique provider event; includes only characteristics of the event. For example, on the prescribed medicine event file the drug name, quantity, and strength would be included on the record.

Condition file--each record represents a unique condition reported for a particular person by the household respondent. Each record includes characteristics associated with the condition for example ICD-9 code, and whether the condition was caused by an accident or injury.

Job file--each record represents a unique job held by a household respondent 16 years old and older and includes characteristics of the job such as wages, industry, and occupation .

For event-, job- and condition-level files, a person may be associated with one record, several records, or not at all. For example, if a person does not report any condition in a particular year, he/she will not have any records on the condition file. It should be noted that if a person reports multiple episodes of an acute condition over the course of a year, multiple records will exist for that condition on the condition file.

All of the MEPS files for a particular year are linkable to each other. Linking information is provided as part of the documentation for each public use data file.

MEPS-HC
Caveats and Limitations

- **Sample size limitations preclude some analyses.**
- **Household respondents may not be able to report accurately certain types of information:**
  - **Type of health plan**
  - **Detailed event information**
  - **Diagnoses**
  - **Limited capacity to produce state-level estimates**

Even after pooling several years of MEPS data, sample size limitations and confidentiality restrictions make MEPS data unsuitable for certain types of analysis. For example, the MEPS data do not support research on rare conditions.

All MEPS data is reported by one designated household respondent. Reporting detailed information on other household members can sometimes be problematic.

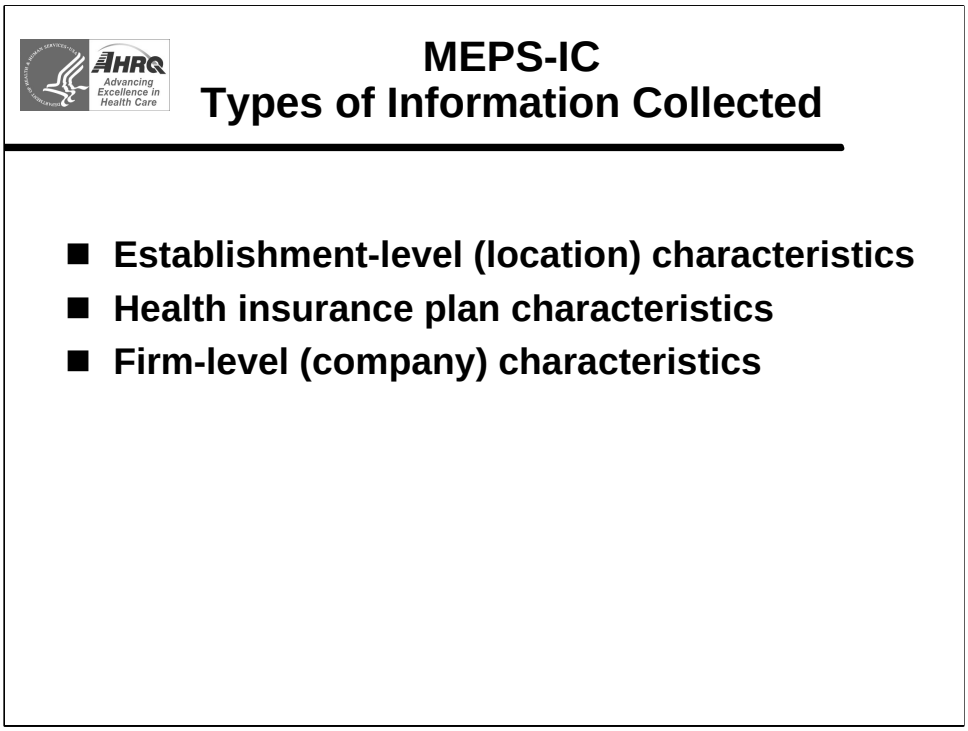
The MEPS was not designed to produce state-level estimates. While aggregate estimates for a selected number of large states may be possible, confidentiality restrictions preclude putting state identifiers on public use files.

MEPS-IC Link Sample

- Current main employers and other employer-based sources of health insurance identified by households in the MEPS-HC.
- No public use files (micro data).
- Link sample data files are available in the AHRQ Data Center.
- Data files available for 1996–1999. Data were also collected for 2001 and 2002.

MEPS-IC List Sample

- Nationwide, annual survey of both private and public sector establishments.
- Data tables with national- and state-level estimates on MEPS Web site.
- No public use files (micro data). Data files are confidential and only available at Census Research Data Centers.



Establishment (Site)

Firm (Enterprise)

Sample is drawn at the establishment level--otherwise no state estimates could be made. However, multi-establishment firms most often make health insurance decisions at the firm level. Sample is designed to collect and support both.

MEPS-IC Purpose

- Availability of health insurance
- Access to health insurance
- Cost of health insurance
- Benefit and payment provisions of private health insurance